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ABSTRACT

Highlighted in this newsletter are the following points, made through charts, tables, and diagrams: (1) Federal obligations to institutions of higher education for all purposes climbed by $643 million, or 18% in fiscal year 1972. (2) Federal academic science funding, that includes all funding categories except the nonscience area, increased by $256 million, or 11%, to a level of $2,599 million. (3) Federal support of academic R&D activities rose by $302 million, or 19%, to $1,853 million. (4) The life sciences received $896 million in Federal academic R&D obligations in 1972--$154 million, or 21% more than in 1971. Other significant R&D increases occured in the environmental sciences--up $51 million to $187 million (38%), and in engineering--up $35 million to $193 million (22%). (5) In 1972 the first 100 universities and colleges in total Federal support received $2,670 million--some $257 million more than in 1971. Their share of total funds to all institutions, however, declined from 69% in 1971 to 65% in 1972. (Author/PG)

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SCIENCE RESOURCES STUDIES **HIGHLIGHTS**

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Federal Support to Universities and Colleges Rises to $4.1 Billion in FY 1972

- Federal obligations to institutions of higher education for all purposes climbed by $643 million, or 18 percent, in fiscal year 1972.[1]
- Federal academic science funding, which includes all funding categories except the nonscience area, increased by $256 million, or 11 percent, to a level of $2,599 million.
- Federal support of academic R&D activities rose by $302 million, or 19 percent, to $1,853 million.
- The life sciences received $896 million in Federal academic R&D obligations in 1972—$154 million, or 21 percent, more than in 1971. Other significant R&D increases occurred in the environmental sciences—up $51 million to $187 million (38 percent) and in engineering—up $35 million to $193 million (22 percent).
- In 1972 the first 100 universities and colleges in total Federal support received $2,670 million—some $257 million more than in 1971. Their share of total funds to all institutions, however, declined from 69 percent in 1971 to 65 percent in 1972.

Trends in Total Program Support

Total Federal obligations (exclusive of loans) to universities and colleges showed substantial gains in both current dollars ($643 million) and constant dollars[2] ($416 million) from fiscal year 1971 to fiscal year 1972. The 1971 to 1972 current-dollar increase was the largest single-year gain since 1965-66, when a 1-year jump of $704 million was reported. This gain represented the second consecutive rise in Federal funding of higher education activities. The only current-dollar decline registered since 1963—when this statistical series began—was a $227 million (7-percent) drop reported in 1970 (chart 1).

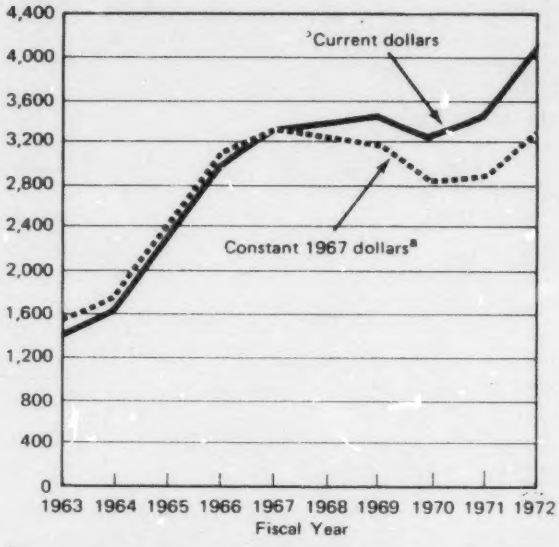
The 1972 total represents a 25-percent increase over the level of funding reported in 1967. Because of inflation, however, the $4.1 billion in 1972 for Federal support to universities and colleges, (when converted to 1967 dollars) is only 0.4 percent higher than in 1967.

Agency Distribution

In 1972, as in previous years, the Department of Health, Education, and Welfare (HEW) led all other Federal agencies in total funding to universities and colleges with $2,828 million. Within HEW, major sources of support included the National Institutes of Health (NIH), $1,356 million; the Office of Education (OE), $999 million; and the Health Services and Mental Health Administration (HSMHA), $359 million. An increase of $565 million in HEW funding came primarily from OE (up $301 million) and NIH (up $202 million).

Chart 1. Federal obligations to universities and colleges, FY 1963-72

[Millions of dollars]



[a]The GNP implicit price deflator was used to convert from current to constant dollars.

SOURCE: National Science Foundation.

[1] Data are based on obligations from Federal agencies in each indicated year, including funds which may be expended in future years. In this regard, it should be noted that some $460 million in 1972 obligations reported by the Office of Education for College Work Study and Educational Opportunity Grants represented initial "forward funding," i.e., funds obligated in 1972 but designated for use in 1973. Since both of these programs are classified as nonscience activities, none of the academic science increases are affected by the first-time "forward funding" of these two programs.

It should also be noted that 1971-72 dollar changes for R&D, academic science, and total obligations cited in this summary are based, in part, on 1971 figures that are $7.2 million higher than those previously published. This was due to an adjustment in the 1971 Department of Defense report for the Massachusetts Institute of Technology.

[2] In the absence of a reliable R&D cost index, the gross national product (GNP) implicit price deflator was used to convert R&D obligations to constant dollars. The GNP deflator includes the effects of the price changes of all goods and services in the economy and therefore can only indicate approximate changes in costs of inputs specifically related to R&D performance.

Prepared in Universities and Nonprofit Institutions Studies Group, Division of Science Resources Studies

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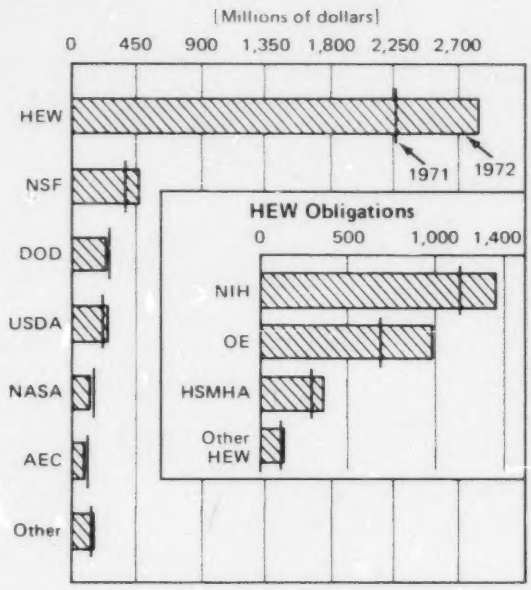
Chart 2. Total Federal obligations to universities and colleges, by agency, FY 1971 and FY 1972



SOURCE: National Science Foundation.

Among the five other major sponsoring agencies, the National Science Foundation (NSF) and the Department of Agriculture (USDA), with $459 million and $239 million, respectively, reported 1971 to 1972 gains of $71 million (18 percent) and $24 million (11 percent). The other three agencies, the Department of Defense (DOD), the National Aeronautics and Space Administration (NASA), and the Atomic Energy Commission (AEC), showed a combined decrease of $31 million, or 6 percent (chart 2).

Institution Ranking

The 100 academic institutions receiving the largest amounts of Federal funding in 1972 accounted for $2,670 million. Although the first-100 total went up by 11 percent in 1972, its share of total funding declined from 69 percent in 1971 to 65 percent in 1972. Of the $257 million increase in obligations to the first 100 institutions, $78 million or 30 percent, went to the first 10 universities. The largest two individual recipients, the Massachusetts Institute of Technology[1] and the University of Washington together accounted for $32 million in increased funding (table 1).

Academic Science Activities

All of the 1972 increase in academic science funding may be traced to the rise in Federal support for R&D activities and R&D plant. While these two categories went up a total of $309 million, the four remaining academic science categories, consisting of (1) fellowships, traineeships, and training grants (in the sciences and engineering), (2) general support for science, (3) facilities and equipment for instruction in science and engineering, and (4) other science activities, showed a combined decrease of $53 million.

For the eighth consecutive year, academic science funding declined as a percentage of total Federal obligations. In 1964 academic science made up 94 percent of the total; by 1972 this proportion dropped to 63 percent. Over this period, non-science support, which in 1972 provided funds for such programs as college work study, educational opportunity grants and subsidies on insured loans, increased fifteenfold from $96 million to $1,532 million.

Research and Development

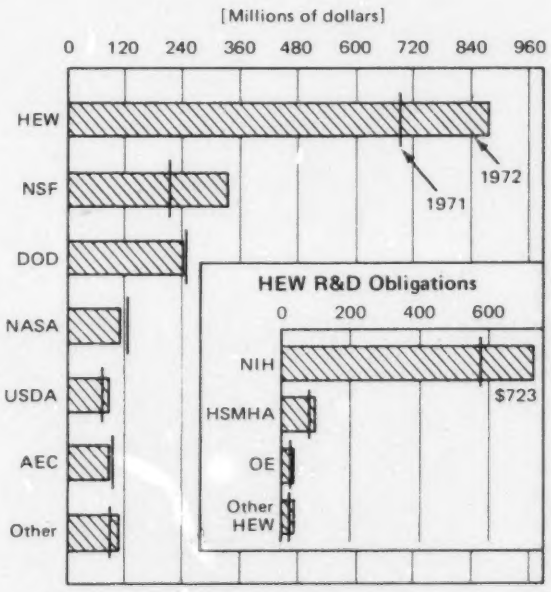
Federal obligations for academic R&D amounted to $1,853 million in 1972. This figure is $302 million higher than the total reported for 1971. This increase may be traced to HEW, up $184 million; and NSF, up $118 million (chart 3). Other changes in agency funding levels offset each other. The largest decline in R&D obligations was reported by NASA—down $16 million to $112 million.

In 1972 R&D plant funding rose $7 million, or 23 percent, the first increase in this category since 1965.

Fellowships, Traineeships, and Training Grants

Federal obligations for fellowships, traineeships, and training grants amounted to $388 million in 1972—$33 million, or

Chart 3. Total Federal R&D obligations to universities and colleges, by agency, FY 1971 and FY 1972



SOURCE: National Science Foundation.

[1]Based on an adjusted 1971 total of $96,835,000 for Massachusetts Institute of Technology

Table 1.—Total Federal obligations to 100 universities and colleges receiving the largest amounts, FY 1972[1]

[Dollars in thousands]

Institutions (in order of total Federal obligations)	State	Total
Total for 100 universities and colleges		$2,670,143
1. Massachusetts Institute of Technology	Mass.	112,472
2. University of Washington	Wash.	73,284
3. University of Michigan	Mich.	66,810
4. Harvard University	Mass.	65,072
5. University of Minnesota	Minn.	64,246
6. University of California-Los Angeles	Calif.	63,893
7. University of Wisconsin-Madison	Wis.	62,512
8. Stanford University	Calif.	62,224
9. Columbia University	N. Y.	60,654
10. University of California-San Diego	Calif.	57,693
11. University of California-Berkeley	Calif.	57,305
12. Johns Hopkins University	Md.	54,681
13. Howard University	D. C.	51,069
14. Ohio State University	Ohio	47,875
15. Cornell University	N. Y.	45,868
16. University of Pennsylvania	Pa.	44,875
17. Yale University	Conn.	44,504
18. New York University	N. Y.	44,093
19. University of Illinois-Urbana	Ill.	42,433
20. University of Chicago	Ill.	42,369
21. University of California-San Francisco	Calif.	36,472
22. University of Colorado	Colo.	35,587
23. Duke University	N. C.	35,266
24. University of North Carolina-Chapel Hill	N. C.	34,005
25. Washington University	Mo.	33,548
26. University of Utah	Utah	32,342
27. University of Southern California	Calif.	31,698
28. Yeshiva University	N. Y.	29,950
29. University of Pittsburgh	Pa.	29,701
30. Pennsylvania State University	Pa.	28,831
31. Michigan State University	Mich.	28,349
32. Purdue University	Ind.	27,895
33. University of Miami	Fla.	27,830
34. University of Florida	Fla.	27,552
35. University of Rochester	N. Y.	27,531
36. University of Alabama-Birmingham	Ala.	26,077
37. Case Western Reserve University	Ohio	25,378
38. University of Iowa	Iowa	24,864
39. University of Arizona	Ariz.	23,011
40. University of Texas-Austin	Tex.	22,761
41. University of Hawaii	Hawaii	22,451
42. University of California-Davis	Calif.	22,389
43. Northwestern University	Ill.	21,829
44. Texas A & M University	Tex.	21,301
45. University of Kansas	Kans.	21,113
46. University of Kentucky	Ky.	21,086
47. Vanderbilt University	Tenn.	20,872
48. University of Missouri-Columbia	Mo.	20,632
49. Boston University	Mass.	20,478
50. Rutgers University	N. J.	20,072
51. California Institute of Technology	Calif.	19,908
52. Temple University	Pa.	19,829
53. Woods Hole Oceanographic Institution	Mass.	19,527
54. University of New Mexico	N. Mex.	18,597
55. Princeton University	N. J.	18,438
56. University of Maryland-College Park	Md.	17,764
57. Indiana University-Bloomington	Ind.	17,573
58. University of Georgia	Ga.	17,261
59. Baylor College of Medicine	Tex.	17,155
60. Colorado State University	Colo.	16,951
61. Oregon State University	Oreg.	16,879
62. SUNY-State University at Buffalo	N. Y.	16,844
63. University of Tennessee-Knoxville	Tenn.	16,817
64. North Carolina State University-Raleigh	N. C.	16,439
65. University of Virginia	Va.	16,174
66. Georgetown University	D. C.	15,715
67. George Washington University	D. C.	15,385
68. University of Cincinnati	Ohio	15,211
69. Tulane University	La.	14,791
70. University of Texas-MD Anderson Hospital & Tumor Institute	Tex.	14,636
71. Wayne State University	Mich.	14,461
72. University of Connecticut	Conn.	14,323
73. Emory University	Ga.	14,139
74. Indiana University-Indianapolis	Ind.	13,730
75. University of Oklahoma	Okla.	13,371
76. Menarry Medical College	Tenn.	13,368
77. University of Illinois-Medical Center	Ill.	13,111
78. University of Nebraska-Lincoln	Nebr.	12,966
79. Tufts University	Mass.	12,905
80. Gallaudet College	D. C.	12,744
81. Florida State University	Fla.	12,614
82. Iowa State University of Science & Technology	Iowa	12,275
83. CUNY Mt. Sinai School of Medicine	N. Y.	12,274
84. University of Massachusetts-Amherst	Mass.	12,253
85. Oklahoma State University	Okla.	12,158
86. University of Maryland Baltimore	Md.	12,075
87. New Mexico State University	N. Mex.	11,681
88. West Virginia University	W. Va.	11,675
89. University of Texas-Southwestern Medical School	Tex.	11,554
90. University of Oregon-Eugene	Oreg.	11,453
91. Louisiana State University-Baton Rouge	La.	11,392
92. Auburn University	Ala.	11,199
93. Virginia Polytechnic Institute	Va.	11,184
94. University of Mississippi	Miss.	11,057
95. St. Louis University	Mo.	10,920
96. Rockefeller University	N. Y.	10,769
97. University of Arkansas-Fayetteville	Ark.	10,671
98. Utah State University	Utah	10,401
99. Mississippi State University	Miss.	10,363
100. University of Alaska	Alaska	10,360

[1] Amounts shown represent awards to the "individual" institutions. Awards to the administrative offices of university systems for which final allocation of funds is unknown are excluded.

SOURCE: National Science Foundation.

8 percent, less than in 1971. The reduction in these grants is reflected by a corresponding decrease (10 percent) in the number of graduate students receiving any type of Federal assistance, continuing the downward trend that began in 1970.[4] Dollar reductions ranging from $5 million to $14 million were reported by the Environmental Protection Agency, the Social and Rehabilitation Service (SRS), OE, and NSF.

HEW provided a total of $347 million, or 89 percent of all Federal training obligations in 1972. Nearly all of these funds came from NIH, HSMHA, OE, and SRS. Each of these HEW units allocated more funds in this category than the second-ranking parent agency, NSF, which awarded $29 million in 1972.

Fields of Science

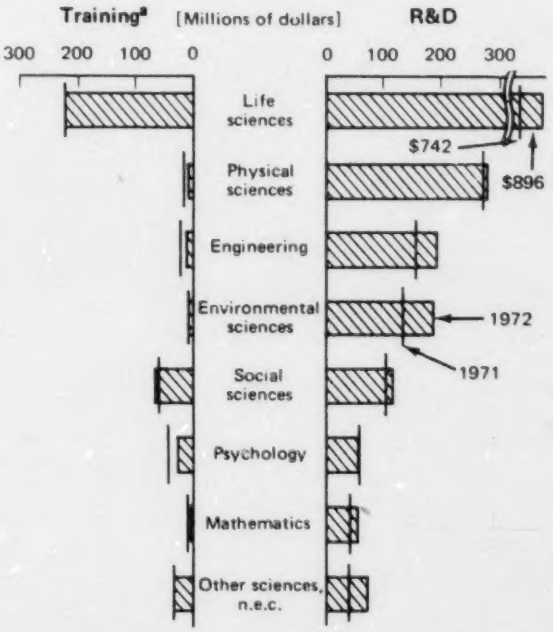
The life sciences, with $896 million in academic R&D funding and $224 million in fellowship and training obligations, accounted for 48 percent of total academic R&D obligations and 58 percent of total training funds in 1972 (chart 4). Funding for research in clinical medical and other medical sciences rose by $169 million to $482 million in 1972, an increase of 54 percent. Other major fields receiving sizable increases in research funding were the environmental sciences, up $51 million to $187 million, and total engineering, up $35 million to $193 million.

The physical sciences, second among major fields in R&D funding, received $279 million for research and development. Because funding of other fields grew more rapidly, the relative support level of the physical sciences fell from 17 percent to 15 percent of the research total.

Selected tabulations from the forthcoming report, *Federal Support to Universities, Colleges, and Selected Nonprofit Institutions, FY 1972* will be made available upon written request to: Universities and Nonprofit Institutions Studies Group, Division of Science Resources Studies, National Science Foundation, 1800 G Street, N. W., Washington, D. C. 20550. The full report will be obtainable from the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402.

[4]Based on data from NSF's *Survey of Graduate Science Student Support, Fall 1972*

Chart 4 Federal R&D and training obligations to universities and colleges, by field of science, FY 1971 and FY 1972



[a]Includes fellowships, traineeships, and training grants.

SOURCE: National Science Foundation.

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